

Burden of *Campylobacter* Infection in United States and Declining Trend in California, FoodNet 1996-1998

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Background: *Campylobacter* is the most common bacterial cause of foodborne illness in the United States. However, population-based data on the incidence of *Campylobacter*, its complications, and associated risk factors are limited. Because chicken is a common source of human *Campylobacter* infections, the USDA mandated changes in poultry slaughter and processing plants to decrease contamination beginning in 1997.

Methods: The Emerging Infections Program's Foodborne Diseases Active Surveillance Network (FoodNet) was established in 1996 in California, Connecticut, Georgia, Minnesota and Oregon. FoodNet conducts active laboratory-based surveillance for nine pathogens, including *Campylobacter*. We describe FoodNet *Campylobacter* data from these five sites, reporting on trends by year and average incidence rates for state, age, gender, and season. We analyze the percent hospitalized by selected variable and indicate the number with invasive disease and deaths. We use a recent risk assessment model to estimate the burden of *Campylobacteriosis* in the United States and to assess specific parameters used in this estimation.

Results: FoodNet surveillance identified 3359 cases of *Campylobacter* in 1996, 3642 in 1997, and 3132 in 1998. These correspond to incidence rates of 23.5 per 100,000, 25.2, and 21.4. Using the risk assessment model, these project to 1.9 million infections in the United States in 1998 (90% CI, 1.6-2.6). The estimate is particularly sensitive to two of the model parameters: the proportion of persons with non-bloody diarrhea who seek medical care and the proportion of infected stool specimens that test positive. The average annual incidence varied substantially by site, from 47.8 per 100,000 in California to 13.0 in Georgia. In California the rate dropped steadily from 57.2 in 1996 to 49.3 in 1997 to 36.8 in 1998. In other sites the rate increased slightly from 1996 to 1997 and decreased slightly from 1997 to 1998. Rates were highest in the youngest age groups (62.7 for <1. year, 43.7 for 1-4 years), and higher among males (26.0) than females (20.7). Rates were highest each year in June and July. Overall, 10.1% of the patients were hospitalized; this hospitalization rate was similar for each year. Hospitalized cases were significantly more likely to have invasive disease, be older than 60 years, be black, and be from Connecticut or Georgia, in multivariate analyses. Overall, 0.8% of the patients had invasive disease. Four patients died in 1996, 1. in 1997 and 2 in 1998.

Conclusion: *Campylobacter* causes about 2 million human infections in the United States each year. California, the FoodNet site with the highest *Campylobacteriosis* rate, has experienced a 36% decrease in cases from 1996 to 1998. Further studies are needed to determine if this decline in human illness is the result of a decrease in the prevalence of *Campylobacter* contaminated chickens.

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